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AMENDED CLAIMS

[received by the International Bureau on 08 April 2004 (08.04.04) original claims 1-20 have been amended, 21-29 have been added.]

WHAT IS CLAIMED IS:

A method for detecting cancer in a patient, comprising:
 extracting blood serum or plasma from the patient;
 detecting the presence or absence of beta-catenin RNA in the blood serum of plasma;
 and
 determining the presence of the cancer based on the detected presence of beta-catenin
 RNA.

- 2. The method according to claim 1, whereby the cancer is colorectal cancer.
- 3. The method according to claim 2, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected presence of beta-catenin RNA.
- 4. The method according to claim 1, whereby the RNA is derived from one of the group consisting of:

gene-encoded beta-catenin,
gene-encoded alpha-catenin,
gene-encoded E-catherin, and
other gene-encoded beta-catenin associated proteins.

- 5. The method according to claim 1, whereby the patient is a human or animal.
- 6. A method for detecting cancer in a patient, comprising: extracting blood serum or plasma from the patient; detecting the presence or absence of beta-catenin DNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin DNA.

- 7. The method according to claim 6, whereby the cancer is colorectal cancer.
- 8. The method according to claim 7, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected presence of beta-catenin DNA.
- 9. The method according to claim 6, whereby the DNA is derived from one of the group consisting of:

gene-encoded beta-catenin,

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gene-encoded alpha-catenin,
gene-encoded E-catherin, and
other gene-encoded beta-catenin associated proteins.

- 10. The method according to claim 6, whereby the patient is a human or animal.
- 11. A method for detecting cancer in a patient, comprising: extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin-associated gene RNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin associated gene RNA.

- 12. The method according to claim 11, whereby the cancer is colorectal cancer.
- 13. The method according to claim 12, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the detected beta-catenin-associated gene RNA.
- 14. The method according to claim 11, whereby the RNA is derived from one of the group consisting of:

gene-encoded beta-catenin,
gene-encoded alpha-catenin,
gene-encoded E-catherin, and
other gene-encoded beta-catenin associated proteins.

- 15. The method according to claim 11, whereby the patient is a human or animal.
- 16. A method for detecting cancer in a patient, comprising: extracting blood serum or plasma from the patient;

detecting the presence or absence of beta-catenin-associated gene DNA in the blood serum or plasma; and

determining the presence of the cancer based on the detected presence of beta-catenin-associated gene DNA.

17. The method according to claim 16, whereby the cancer is colorectal cancer.

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- 18. The method according to claim 17, whereby determining the presence of colorectal cancer comprises detecting pre-neoplastic colorectal polyps based on the presence of detected beta-catenin-associated gene DNA.
- 19. The method according to claim 16, whereby the DNA is derived from one of the group consisting of:

gene-encoded beta-catenin,
gene-encoded alpha-catenin,
gene-encoded E-catherin, and
other gene-encoded beta-catenin associated proteins.

- 20. The method according to claim 16, whereby the patient is a human or animal.
- 21. The method according to claims 2, 7, 12, or 16, whereby the colorectal cancer is colorectal carcinoma or colorectal adenoma.
- 22. A method of determining the presence of carcinoma, the presence of adenoma, or the absence of carcinoma and adenoma in a patient, comprising:

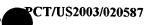
extracting blood serum or plasma from a patient;

measuring the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of the patient and the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of a control person known not to have carcinoma or adenoma;

determining a ratio of the amount of beta-catenin DNA or RNA detected in the blood serum or plasma of the patient to the amount of beta-catenin DNA or RNA detected in the blood serum or plasma of a control person known not to have carcinoma or adenoma, whereby the ratio of approximately 30-80 indicates the presence of adenoma, the ratio of approximately above 500 indicates the presence of carcinoma, and the ratio of approximately 1 indicates the absence of carcinoma and adenoma.

- 23. The method according to claim 22, whereby the carcinoma is colorectal carcinoma.
- 24. The method according to claim 22, whereby the adenoma is colorectal adenoma.
- 25. The method according to claim 22, whereby the DNA or RNA is derived from one of the group consisting of:

gene-encoded beta-catenin, gene-encoded alpha-catenin,



gene-encoded E-catherin, and other gene-encoded beta-catenin associated proteins.

- 26. The method according to claim 22, whereby the ratio of 30 indicates the presence of adenoma.
- 27. The method according to claim 22, whereby the ratio of 598 indicates the presence of carcinoma.
- 28. The method according to claim 22, whereby the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of the patient and the relative amount of beta-catenin DNA or RNA in the blood serum or plasma of a control person known not to have carcinoma or adenoma is measured using real time reverse transcription-polymerase chain reactions.
- 29. The method according to claims 1, 6, 11, or 16, whereby the detecting step is accomplished using reverse transcription-polymerase chain reactions (RT-PCR).